

West Coast South Strategic Advice by Network Rail

Briefing on Bletchley to Milton Keynes section
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Summary

This briefing supports the recommendations in the Network Rail (NR) West Coast South Strategic Advice (WCSSA) report for extra infrastructure between Bletchley and Milton Keynes Central (MKC) to enable more East West Rail (EWR) services to reach MKC. This is rated as the highest priority intervention. **This briefing proposes that this scheme should be taken forward as soon as possible, irrespective of the timetable for and extent of HS2, and that some interim measures should be built in the next two years.**

Introduction

The Network Rail WCSSA report (published in August 2023 but clearly written a year or so earlier) looks at how to make use of capacity on the West Coast Main Line (WCML) released when some fast trains between London and Birmingham and Manchester transfer to HS2. It examines several scenarios where the primary benefit is for regional passengers, local passengers, connectivity, East-West connectivity or freight.

The report makes several proposals for upgrades to other parts of WCML at Coventry, Nuneaton and Rugeley but it states that the Bletchley to MKC section is the highest priority and so this paper focusses on that section.

(The Birmingham to Manchester section of HS2 was cancelled by the Tory government in October 2023 and seems unlikely to be re-instated by the new Labour government. Even with the rump of HS2 some fast trains between London and Birmingham and Manchester would still transfer to HS2, but probably fewer than originally envisaged. So some capacity on WCML would be released, but not as much as originally planned.)

Train services

The NR WCSSA report proposes that MK Central becomes an interchange hub with most WCML and East West Rail (EWR) services calling there. Planning principle B states:

“Milton Keynes ‘Hub’. Call all or the vast majority of passenger services at Milton Keynes Central. Efficient use of capacity, minimising forced changes at Bletchley.”

We very much support this.

It proposes EWR has 2 trains per hour (tph) to MKC from each of Oxford (possibly go on to Northampton), Aylesbury and Cambridge (possibly go on to Northampton and Birmingham). An additional EWR 2 tph Oxford - Cambridge would serve Bletchley but not MKC and thus not use the WCML and so are not considered here.

Between London and MKC the various scenarios propose 6-10 tph fast services and 4-6 tph slow services. Between London and MKC the various scenarios propose 3-5 tph freight services and 1-2 tph freight via EWR. In general the more freight services the fewer passenger services and vice versa. (see diagram below for one scenario)

The key part of the proposal is extending some EWR services from Cambridge, Bedford and some Marston Vale stations to MKC.

Universal Studios are proposing to build a major theme park at Kempston Hardwick, near Bedford, to attract thousands of visitors each day. This is being supported by all local authorities in the area. This would be served by stations on the MML at Wixams (currently under construction) and on the EWR at Kempston Hardwick (relocated station). It expects visitors to come from all over the UK and beyond. Visitors from the West Midlands and the North would travel on the WCML to MKC. It would be extremely inconvenient if they had to change at both MKC and Bletchley to get an EWR train to Kempston Hardwick. It is therefore essential that some EWR services from the Bedford direction are extended to MKC to avoid the double interchange penalty.

Infrastructure

Even with capacity released by HS2 the Bletchley - MKC section of WCML would be congested and overcapacity in all scenarios and unable to satisfactorily handle all of the proposed services according to the NR report. It recommends an extra 2 tracks on the East side from Denbigh Hall South Jn (where the Flyover lines join the Slow lines just before crossing over Watling St) to MKC station, about 3 km, and 2 extra platforms at MKC with connection to the slow lines at the north end of the station. (see diagram below) This would require extra spans on bridges over Watling St and A5, widening of about 1 km of cutting and loss of some staff car parking at MKC station. It is not near housing and no property demolition would be required. There is an empty 1000 space MSCP next to MKC station, owned by MK City Council, that could handle the displaced staff car parking.

The report also recommends a North to East chord at Bletchley. This is expensive, difficult to do and would require some land acquisition and commercial property demolition. This is not as important as the extra tracks on the WCML. This would be necessary if there were significant numbers of freight trains on EWR from the east heading north and vice versa. For occasional freight trains, as an alternative to a N to E chord at Bletchley, see Freight loop at Swanbourne Sidings, below.

Passenger trains to/from the east could use the chord, if built, or could reverse in Bletchley station (high or low level platforms). Calling and reversing at Bletchley provides better connectivity at Bletchley but would add about 5 mins to journey times to/from MKC. Track and signalling would require fairly minor alterations to enable EWR trains between Cambridge and MKC to reverse in any of platforms 5 (already has capability), 6, 7 and 8.

This extra infrastructure between Bletchley and MKC is recommended as the highest priority intervention. It is described as “no regrets” work because it is needed in all

scenarios. It is estimated to cost in the range £350-500m. A considerable part of that will be for the N-E chord, which brings only small benefit. The 6 tracking of 3km of WCML, which brings most of the benefit, would cost less, probably in the region of £250m.

This is a welcome change of heart from NR. At the 2018 TWAO Public Inquiry into the Oxford-MKC section of EWR, NR opposed any changes to the short section of WCML that it would share, Denbigh Hall South Jn to MKC. It even opposed minor changes such as making the high level platforms at Bletchley reversible from the Cambridge direction and increasing the speed limit at Denbigh Hall South Jn, where the flyover lines join the slow lines, from 25mph to at least 40mph. Retaining the the 25mph speed limit would significantly reduce the capacity of the slow lines if many trains take the flyover line, which they would do with EWR trains to Oxford, Aylesbury and Cambridge.

Recommendation and Timing

Because of the previous government's incompetence and indecision there has been considerable uncertainty about when HS2 might start operating, what its extent will be, and thus how much WCML capacity would be released and when that would happen. The last statement by the previous Prime Minister (October 4th 2023) stated that while the sections of HS2 between Birmingham/Handsacre Jn and Euston will go ahead the sections north of Birmingham to Manchester and Leeds will not. The new government has confirmed this, although the Mayors of Birmingham and Manchester and others have made proposals.

However even if HS2 is delayed or parts cancelled, and so less capacity than originally planned is released, this Denbigh Hall South Jn to MKC scheme would still be beneficial because it would enable EWR services to reach MKC, where there will still be interchange with existing services and some new services on WCML. Thus this scheme should be taken forward as soon as possible, irrespective of the timetable for HS2.

The construction of the EWR route to Oxford is well underway (the track is now complete and test trains have been run on it) and services should start some time in 2025. The construction of the EWR route to Aylesbury is currently on hold but much of it will be constructed by HS2 Ltd in the next few years. The approval and construction of the EWR route to Cambridge is likely to take around 5 years, with operation starting around 2029. So it would be sensible if this scheme between Bletchley and MKC was also completed by that time. Given lead times of typically 5 years that means starting the planning now with construction around 2027 rather than waiting for HS2 to be completed.

Interim

Given that the above measures are likely to take around 5 years to implement some interim measures that can be implemented more rapidly should be considered. The speed limit for the diverging route at Denbigh Hall South Jn, where the flyover lines join the slow lines, should be increased from 25mph to at least 40mph, preferably 50mph, in both directions. As well as increasing the speed the layout of the junction should also be changed from a switched diamond to a ladder type junction to provide more flexibility. These changes can be made by lengthening the junction southwards, where the slow

lines and the flyover lines run parallel and at the same level. This does not require any land acquisition or planning permission so could be done within a couple of years.

Also to ease congestion and slightly increase capacity on the slow lines, to allow more EWR services to reach MKC, loops could be installed on the approaches to the congested area so that a passenger train can overtake a freight train and go through ahead of it.

Freight loops

While the NR report does consider some loops for freight trains elsewhere on WCML it does not consider any in the MK area. However it is sometimes necessary to put a freight train into a loop so that it can be overtaken by a faster passenger train. This is often needed just before a congested area so that a passenger train can go through ahead of a freight train. In this area that would mean near Bletchley for northbound (down) trains and near Wolverton for southbound (up) trains. Below are suggestions for such loops and also for a run-round loop at Swanbourne Sidings.

Bletchley

There are already two loops at Bletchley, known as Bletchley Relief 1 and Bletchley Relief 2, both on the east side of the Up Slow, which can be used by both passenger and freight trains in both directions. However to access them a down freight train has to cross onto and run along the Up Slow line before entering one of the loop tracks. Similarly, when exiting the loop the freight train has to cross the Up Slow to regain access to the Down Slow line. Thus a down freight train using the loop has to cross the Up Slow twice, and at a low speed. These conflicting moves (as they are known in railway terminology) significantly reduce the capacity of the Up Slow whenever down freight trains are looped.

The tracks could be reconfigured to avoid these conflicting moves. Between Bletchley North Jn and just short of Denbigh Hall South Jn (near the Spenslow Rd footbridge) the Up Slow and Bletchley Relief 1 tracks could be swapped over. This would enable a down freight train to enter and leave the Bletchley Relief 1 loop without having to cross the Up Slow at all. This increases capacity and makes timetabling much more flexible. The Bletchley Relief 1 track would still be useable as a loop in both up and down directions.

Wolverton

At Wolverton there are the Centre Sidings, used to access the Wolverton Works site, but these are too short for modern freight trains and have no direct entry from either the Up Slow or Down Slow, only exits. Trains have to stop and reverse into the sidings. The tracks could be altered to accommodate a 775m freight train. Just south of Wolverton station the Up Slow could be slewed over onto the trackbed of an old siding as far as just past the canal bridge where the Up Slow already slews to the east. One of the centre sidings could then be extended north in the resulting gap with access from the Up Slow just south of Wolverton station. This would provide a loop for Up freight trains approaching the congested MKC - Bletchley section of WCML. It would also enable trains

from the north for Wolverton works to enter the Centre sidings without having to reverse on the Up Slow.

Swanbourne Sidings

For freight trains, as an alternative to a N to E chord at Bletchley a run-round loop could be provided at the site of the former Swanbourne Sidings on EWR west of Bletchley (this is about 4km west of Bletchley flyover, not near the village of Swanbourne). Freight trains on EWR from the east heading north on WCML could cross the flyover, enter the sidings, loco runs round, train proceeds back over the flyover and joins WCML slow lines at Denbigh Hall South Jn. Vice versa for freight trains from north on WCML heading east on EWR.

Such a run-round loop could be expected to handle 1 tph, so typically 1 tph each way every 2 hours. Two loops might be able to handle 1 tph each way. This would be able to handle fewer freight trains than a N - E chord and would add 30-60 mins to journey time. During the WCRM project in early 2000s infrastructure trains did something similar. EWR requires a loop for freight trains somewhere between Bicester and Bletchley. A loop at the site of the former Swanbourne Sidings would also satisfy this requirement.

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<https://sacuksprodnrdigital0001.blob.core.windows.net/regional-long-term-planning/North,%20West%20and%20Central/West%20Coast%20South%20Strategic%20Advice%202023.pdf>

Table 46: Bletchley - Milton Keynes Northern Connection and Bletchley Northeast Chord: Train service changes by scenario	
Freight Focus	+2tph Aylesbury - Milton Keynes +2tph Cambridge - Milton Keynes
Intermediate Markets	+2tph Aylesbury - Milton Keynes +2tph Cambridge - Milton Keynes +2tph London Euston - Milton Keynes
East West Connectivity	+2tph Class 4 Freight via EWR +Major performance impact
New Connections	+1tph Aylesbury-Milton Keynes +2tph Cambridge - Milton Keynes +1tph Clapham Jn - Milton Keynes +1tph Oxford - Northampton
Order of magnitude of cost	£350-500m
Priority for development	High

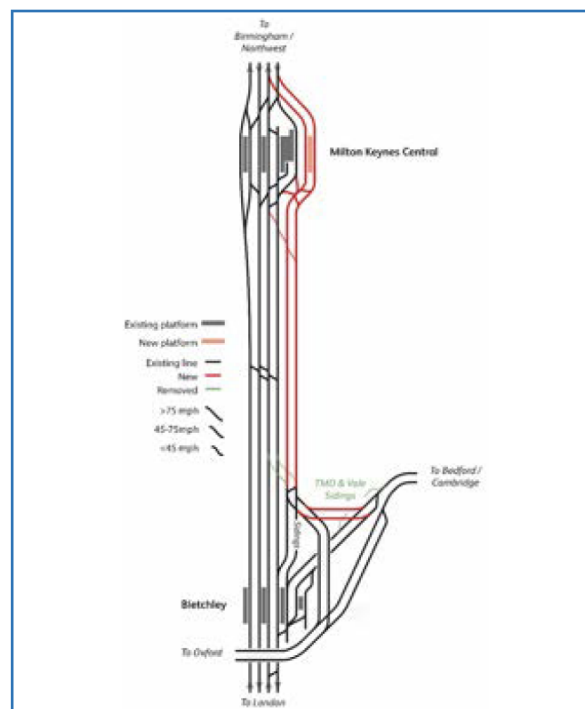


Figure 53: Bletchley-Milton Keynes Northern Connection and Bletchley Northeast Chord basic layout requirements.

Figure 49: Peak Commuter scenario base ITSS.

The base ITSS captures all the train service requirements and objectives for this scenario and has been used as a basis for capacity analysis testing.

Passenger service structure shown left, freight service structure shown right. One line represents one train path per hour in both directions.

In the Peak Commuter scenario passenger services shown were planned in the southbound direction only, and southbound freight de-prioritised.

